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99TH CONGRESS
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HOUSE OF REPRESENTATIVES

REPORT
99-415

ORIGINAL COMPLETED

FEDERAL TECHNOLOGY TRANSFER ACT OF 1985

DECEMBER 5, 1985.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. FUQUA, from the Committee on Science and Technology, submitted the following

REPORT

[To accompany H.R. 3773]

[Including cost estimate of the Congressional Budget Office]

The Committee on Science and Technology, to whom was referred the bill (H.R. 3773) to amend the Stevenson-Wydler Technology Innovation Act of 1980 to promote technology transfer by authorizing Government-operated laboratories to enter into cooperative research agreements and by establishing a Federal Laboratory Consortium for Technology Transfer within the National Science Foundation, and for other purposes, having considered the same, report favorably thereon with amendments and recommend that the bill as amended do pass.

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The amendments (stated in terms of the page and line numbers of the introduced bill) are as follows:

Page 3, lines 17 and 18, strike out "after the enactment of this section," and insert in lieu thereof "after the election by any Federal agency to implement subsection (a),".

Page 3, line 19, strike out "each agency's" and insert in lieu thereof "that agency's".

Page 8, strike out line 11.

Page 8, line 15, strike out the period and insert in lieu thereof "; and".

Page 8, after line 15, insert the following new subparagraph:

> "(I) establish advisory committees in each Federal laboratory consortium region composed of representatives from State and local governments, large and small business, universities, and other appropriate persons to advise on the effectiveness of the program (and the members of any such advisory committee shall serve at no expense to the government).

Page 11, after line 11, insert the following new subparagraph:

> (B) by inserting immediately before the next to last sentence the following new sentence: "Furthermore, individuals filling positions in an Office of Research and Technology Applications shall be included in the overall laboratory/agency management development program so as to ensure that highly competent technical managers are full participants in the technology transfer process;

Page 11, line 12, strike out "(B)" and insert in lieu thereof "(C)".

Page 11, line 16, strike out "(3)" and insert in lieu thereof "(D)".

Page 16, line 11, strike out "governmentoperated" and insert in lieu thereof "Government-operated".

Page 17, line 17, strike out "government-operated" and insert in lieu thereof "Government-operated".

Page 17, lines 23 and 24, strike out "government-operated" and insert in lieu thereof "Government-operated".

Page 18, line 11, before "laboratory" insert "Government-operated".

Page 18, lines 14 and 15, strike out "government-operated" and insert in lieu thereof "Government-operated".

Page 21, strike out lines 4 through 7 and insert the following:

> (11) The heading of section 8 of such Act is amended by striking out "CENTERS FOR INDUSTRIAL TECHNOLOGY" and inserting in lieu thereof "COOPERATIVE RESEARCH CENTERS".

NEED FOR LEGISLATION

During the five years since the enactment of the Stevenson-Wydler Technology Innovation Act P.L. 96-480, there has been an

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explosion of interest in harnessing American inventiveness in ways that help the domestic economy. While many of the provisions of the Stevenson-Wydler Act have not been implemented, some of the concepts have blossomed at the state and local level, and the Department of Commerce has engaged in related activities. At the same time, the desire of industry, universities, non-profit organizations, and units of state and local government to cooperate with the federal laboratories in programs of mutual interest has never been greater.

The Federal Government funds approximately half of this country's total research and development, and much of this work is performed in government-owned laboratories. The national interest demands that these federal laboratories be more responsive to our economic need for their new technologies. Where appropriate these technologies should be transferred from the federal sector and translated into new commercial products and processes.

Five years of experience under Stevenson-Wydler have made the need for legislative change apparent in a number of areas. Statutory language is required to permit most federal laboratories to enter into cooperative research and development agreements. Legislative changes are needed to improve the ability of the federal laboratories to identify innovations with commercial potential and to strengthen the Federal Laboratory Consortium for Technology Transfer (FLC). Employee incentives for participating in technology transfer need improvement. Technical changes are needed to make the Stevenson-Wydler Act reflect current practice.

Background

The Science and Technology Committee has had a longstanding and continuing interests in promoting utilization of federal technology. A major step was taken in this area with the enactment of the Stevenson-Wydler Technology Innovation Act (P.L. 96-480) in 1980. Section 11 of this Act mandated that federal laboratories transfer federally originated technology to state and local governments and to the private sector.

Stevenson-Wydler made technology transfer an integral part of the research and development responsibilities of federal laboratories and their employees. Offices of Research and Technology Applications (ORTAs) were established within most federal laboratories to identify and transfer technologies with commercial potential. The Center for the Utilization of Federal Technology (CUFT) was also created within the Department of Commerce as a clearinghouse for dissemination of information on federal technologies with potential application to state and local governments and to private industry.

Oversight hearings on implementation of the Act were held by the Committee on Science and Technology in 1981. It was clear at that time that the new law was promoting transfer and utilization of federal technology, but that implementation of the law was incomplete and that more could and should be done.

The Federal Laboratory Review Panel, established by the White House Science Council in 1982, highlighted one need for further federal activity in this area. The Review Panel's report, endorsed

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by the President, recommended increased interaction between federal laboratories and industry. It called for greater exchange of knowledge and personnel, for collaborative projects, and for industry funding of laboratory work.

The Panel's findings reflect a widespread belief that research in the federal labortories can be better attuned to industrial needs without compromising the laboratories' missions. Moreover, the benefits that would accrue to industry from the federal share of the joint research and development funding are deemed to be in the national interest.

In 1984, the Joint Economic Committee of the Congress added further legislative recommendations when it reviewed federal technology transfer as part of a broader study of enterpreneurship and innovation. That Committee endorsed the positive effects of P.L. 96-480 but felt that federal laboratories and their employees needed further incentives for technology transfer. It also recognized that the Federal Laboratory Consortium (FLC), an ad hoc association of the ORTAs created by Stevenson-Wydler, had become, de facto, the primary body for facilitating technology transfer from the federal laboratories. Therefore, the Joint Economic Committee recommended that the Federal Labortory Consortium be given a statutory basis for its role.

Legislative History

In response to these needs, two legislative proposals were put forward early in the 99th Congress. H.R. 695 was introduced on January 24, 1985 by Congressman Michel and Mr. Moorhead, Mr. Hyde, Mr. Ritter, and Mr. Zschau. This bill was referred jointly to the Committee on Science and Technology and to the Committee on the Judiciary. H.R. 1572 was introduced on March 19, 1985 by Congressman Lundine with Mr. Fish, Mr. Seiberling, Mr. Walgren, Mr. Boehlert, and Mr. MacKay. The bill was referred solely to the Committee on Science and Technology.

Both bills were then referred to the Science, Research and Technology (SRT) Subcommittee of the Committee on Science and Technology which held legislative hearings on them on May 21 and 22, 1985 in Washington, D.C. and on July 15, 1985 in Oak Ridge, Tennessee.

During the five months following the initial hearings, extensive negotiations occurred involving all affected parties. These negotiations resulted in draft technology transfer legislation, which was supported both by Mr. Lundine and Mr. Michel. The language used in the draft was treated as a substitute amendment and then further amended by the SRT Subcommittee before being reported to the Full Committee on October 31, 1985 as an amendment in the nature of a substitute to H.R. 1572.

A clean Bill, H.R. 3773, incorporating the legislative language reported by the SRT Subcommittee, was introduced on November 18, 1985, by Mr. Fugua with Mr. Michel, Mr. Lundine, Mr. Walgren, Mr. Lujan, Mr. Boehlert, Mr. Brown of California, Mr. Mineta, Mr. Ritter, Mr. Valentine, Mr. Henry, Mr. Bruce, Mr. Cobey and Mr. Wirth, and referred to the Committee on Science and Technology. H.R. 3773 was marked-up on November 21, 1985 by the Committee

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and, a quorum being present, the bill was ordered favorably reported, with amendments, by a unanimous voice vote.

MAJOR PROVISIONS OF H.R. 3773 AS REPORTED

1. COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENTS

currently there is a wide variance in the ability of government laboratories to enter into cooperative research development arrangments with private industry, universities, and non-profit organizations, and other interested parites. Some agencies such as NASA, because of express legislative authority in their organic acts, have a long history of supporting such arrangements. Others such as the Department of Agriculture (USDA), the National Instituties of Health (NIH), and the Veterans Administrative (VA) have little or no statutory authority upon which to base such working relationships. Laboratories in certain other agencies are reluctant to enter such arrangements because of the cumbersome, time-consuming process required to obtain approvals for joint research.

Private sector interest in working with the Federal Government to solve mutual problems in increasing. Communities and states are looking to laboratories within their boundaries for help in revitalizing local economies. One such example is the Peoria, Illinois Area. The Committee received testimony from representatives of Peoria Economic Development Council who wish to draw upon expertise within USDA's Northern Regional Research Center (NRRC) in Peoria, Illinois as well as the University of Illinois and area industry, to develop efficient bio-production systems capable of producing a greater diversity of useful products. Vacant research facilities are now available to house the project. This or similar legislation must become law before the Peoria project and certain others like it can go forward.

The legislation contains cooperative R&D authority, in which one or more federal laboratories could supply personnel, services, facilities, equipment, or other non-monetary resources under an agreement with one or more non-federal parties who are willing to supply funds and other resources to the effort. The agreements would be signed by the laboratory director pursuant to agency regulations or instructions to be promulgated within 180 days of enactment. The regulations must limit headquarters review, if any, to 30 days, must provide special consideration both for small businesses and to business which will manufacture resultant products within the United States, and must include employee standards of conduct for resolving potential conflicts of interest. Projects, such as the one in Peoria, which are ready to proceed do not need to wait for promulgation of the regulations, and agency regulations now in place, such as those at NASA, will stay in effect until modified. The term "government-operated laboratory" in this Act is intended to be generic and to apply to all organizations primarily sponsored or owned by the Federal Government and engaged in research, development, engineering, test and evaluation, or otherwise developing or maintaining technology. This includes, but is not limited to, federal laboratories, national laboratories, centers, directorates, institutes, federally-funded R&D centers and depots.

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II. FEDERAL LABORATORY CONSORTIUM

The Federal Laboratory Consortium for Technology Transfer (FLC) began in 1971 as a Consortium of eleven Department of Defense laboratories and in 1974 expanded to include interested laboratories from other agencies. The organization has grown rapidly, both in numbers of member laboratories and in overall acceptance, especially after laboratories began implementing and Stevenson-Wydler Act's requirement to establish their own technology transfer programs. It is now a voluntary organization of almost 300 federal laboratories from eleven agencies.

Part of the FLC's success must be attributable to its unique organizational structure. Technology transfer officers are designated by laboratory directors to represent the member laboratories. Since the passage of P.L. 96-480 in 1980, these representatives have tended to be the Research and Technology Application Officers (ORTAs) mandated by the Act. These representatives and their counterparts from agency headquarters form a voting membership for organizing the Consortium, electing Consortium officers, and otherwise carrying out the activities of the Consortium. Thus, the FLC is an association of those responsible for technology transfer at the working level rather than an external organization imposed upon the laboratories and agencies.

While technology transfer typically is carried out on a person-to-person basis at the laboratory level, the Consortium allows for a free flow of ideas and information among the technology transfer officers of the various federal laboratories and provides necessary services that no other federal organization can provide, but on a limited and uneven basis. However, as expressed in testimony before the SRT Subcommittee, a comprehensive, systematic technology transfer function requires greater resources than the ad-hoc FLC has been able to muster through voluntary contributions from agencies and laboratories. Therefore, Section 3 of this Act formally establishes the Consortium and provides that the National Science Foundation (NSF) will house the Consortium and provide administrative support for the organizaiton.

It is intended that the statutory basis for the Consortium and its stable source of funding shall not interfere with its decentralized organization. Agency and laboratory representatives will be designated by agency heads and laboratory directors, and the laboratory representatives should continue to be the ORTAs. In the case of smaller laboratories without full-time ORTA professionals, agency heads may choose to designate a single Consortium representative for more than one laboratory on either a regional or national basis. The responsibilities of the Consortium as defined in this Act are activities that are appropriate for the collective, government-wide action of the laboratory technology transfer officers and they complement the activities of the individual officers relative to their own federal laboratories. None of the responsibilities is to interfere with each agency's ability to set policy for its own laboratories or with the ORTA officers' ability to deal directly with each other or with potential users of federal technology. As is presently the case, the FLC shall exist within the bounds of policy set by the various agencies with government laboratories.

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It is further intended, to the extent possible, that the existing programs and initiatives of the FLC be continued uninterrupted as the organizational changes required by this Act are made. As soon as practical after enactment, the current FLC officers are asked to convene a meeting both of the current FLC representatives and of any new representatives required under this Act to begin this transition. Because of the twin goals of continuity and increased effectiveness of the FLC, these efforts should not necessarily await funds transfers under the FLC set-aside provision

In performing its responsibilities, the Consortium may make use of the administrative support services of the National Science Foundation (NSF). It will have to rely upon NSF to set personnel policies for its limited number of employees located at NSF, to provide office space and equipment, and to provide other services as needed. The Consortium shall make reimbursements available to the NSF for the costs of these services.

Because of the need for an unusual organizational structure, the NSF is not to be responsible for performing the duties of the Consortium or accountable for the actions of the Consortium. The Director, however, is encouraged to offer advice and counsel to the FLC as appropriate.

Accountability of the Consortium shall be through annual reporting to Congress and to the heads of the agencies that are funding Consortium activities. Initial funding of the FLC is through a very small set-aside totalling less than $1 million per year from the budgets of agencies with government-owned laboratories (whether government-operated or contractor-operated). This set-aside ends after five years. It is expected that this funding will be supplemented by voluntary contributions from agencies and laboratories and that the voluntary contributions will provide full funding for Consortium activities after 1991 including reimbursement of NSF.

Because participation in the activities of the Consortium corresponds to one aspect of the responsibilities of the laboratories' ORTA officers as mandated by P.L. 96-480, Consortium representatives shall generally receive no compenstion for serving on the Consortium other than the salary paid by the agency or laboratory that they represent. For the same reason, agencies and laboratories shall also cover travel and other expenses of their Consortium representatives as required to attend Consortium meetings or to perform other responsibilities as laboratory or agency representatives. However, in cases in which a representative serves as an officer of the Consortium and spends a majority of his or her time engaged in activities particular to the Consortium, rather than to his or her laboratory or agency, the Consortium may, if requested make available reimbursement to the laboratory or agency for the salary of that representative and for travel and other expenses incurred as a Consortium officer. More stable funding for the FLC, as provided for in this bill, should also permit establishment of an electronic mail system connecting all FLC representatives to be patterned after the highly successful information dissemination system now being used by the FLC's officers.

As required by its by-laws, the FLC currently employs a 12 member advisory committee composed of representatives from state and local governments, professional organizations, industry

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and universities. This advisory committee meets at least twice a year in conjunction with FLC national meetings. The members serve for three years and are, at present, composed of successful users of the FLC. The FLC leadership attempts to obtain a membership that can understand and deal with overall FLC operations. In order to obtain a more effective assessment of the technology transfer process, each FLC region should establish a regional advisory committee composed of representatives, at least half from industry (both large and small businesses), and also from state and local governments, regional organizations, professional organizations, universities and other interested parties such as chambers of commerce or industrial development organizations. These committees should be composed of both "successful users" and non-users of the FLC system, so that the feedback on the effectiveness of technology transfer reflects both what has worked and what is lacking. The advisory committee members should be selected by the regional FLC network and are expected to serve at no expense to the government.

III. REWARDS FOR SCIENTIFIC, ENGINEERING, AND TECHNICAL PERSONNEL OF FEDERAL AGENCIES

Federal agencies currently have statutory authority to pay cash incentive awards to their federal employees or former employees. Awards up to $10,000 are subject only to the approval of the head of the agency (5 U.S.C. 4502(a)). With the concurrence of the Office of Personnel Management (OPM), awards up to $25,000 may be granted (5 U.S.C. 4502(b)) and, with the approval of the President, awards may exceed that amount (5 U.S.C. 4504). The National Aeronautics and Space Administration (NASA) has additional authority to provide awards up to $100,000 through the Space Act (42 U.S.C. 2458).

If this authority is used effectively, incentive awards programs will encourage creativity and innovativeness among the scientists, engineers, and technical personnel of the Federal Government. They will also boost employees' morale by making individuals aware that their contributions are important and appreciated.

Concern has been expressed recently that many agencies have been underutilizing their authority to pay cash awards for scientific and technical contributions. In the thirity-one year period between 1954 and 1985, for example, agencies other than NASA made only nine invention awards that required OPM approval (awards over $10,000 now, over $5,000 before the Civil Service Reform Act of 1978). Data show that NASA has been utilizing its authority to make major awards more frequently than the other federal agencies. In 1984 alone the agency made almost $250,000 in total awards to NASA and NASA contractor employees.

Various proposals have been offered to rectify the situation, including a suggestion that federally employed inventors be allowed to retain a percentage of the royalties returned to the government pursuant to the licensing of their inventions. This proposal has substantial merit for certain agencies and can be a desirable method of rewarding employees under this section. However, the major R&D agencies do not have identical agency cultures and what is

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helpful for one agency can be harmful to another Therefore, rather than imposing a single prescription on all of the different agencies, the heads of the agencies are directed to use their existing statutory authority to develop and implement an awards program for their scientific, engineering, and technical personnel. NASA, as mentioned above, is generally recognized as the federal agency that rewards its employees most consistently. Therefore, it is anticipated that NASA will not be required by this Act to make significant changes in its awards program and, other agencies may find NASA's program to be one model to consider for their own use.

Other Provisions

I. UTILIZATION OF FEDERAL TECHNOLOGY

Section 2 of the Act requires, if appropriate, that technology transfer activities be considered positively in personnel matters and makes the following series of small changes in the Stevenson-Wydler Act. It requires laboratories with 200 or more full-time scientific and technical personnel to have at least one full-time equivalent technology transfer (ORTA) position. These laboratories are expected to assign technology transfer as the primary job assignment of at least one full-time professional. The requirement for a full-time equivalent, rather than a full-time person, is intended to provide the laboratories and agencies with some flexibility; for example, they might assign as secondary duties some efforts on programs that are synergistic with technology transfer, such as Industrial Research and Development (IR&D) programs, military critical technology assessments, and the Small Business Innovation Research (SBIR) program. The remainder of the full-time equivalent requirement should be provided by professionals assisting this individual in active transfer. Laboratories with less than 200 full-time equivalent scientific, engineering, and related technical positions are expected to have an individual who devotes substantial efforts to technology transfer including, if possible, Federal Laboratory Consortium participation, but if resources are limited this activity does not need to involve the equivalent of a full-time person.

To ensure that highly motivated individuals are selected, each ORTA position should be clearly identified in the agency and/or laboratory career development program for assessing and training potential technical managers. This will also serve to educate potential managers to the needs and methods of effective technology transfer and assure that ORTA officers who do not intend to finish their careers in that position have ample opportunity to advance their careers.

Effective technology transfer requires active efforts by individuals with knowledge of the laboratory's technology and organizational culture. These individuals should identify technology and expertise within the laboratories, should identify technical needs and potential applications in the public and private sectors, and should work with local, regional, and national groups, including the Federal Laboratory Consortium (FLC). Although technical information activities, such as technical report preparation and distribution, li-

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brary, and other information services, contribute to some technology transfer projects, these activities alone are not considered to satisfy the intent of this Act.

The Act also clarifies the requirement that laboratories perform applications assessments for research and development activities which, in the opinion of the laboratory, have commercial applications; it is important that these assessments be viewed as part of an active effort to transfer laboratory technology and not as a lengthy bureaucratic effort to create a reference document. They can be targeted to specific groups of likely users and should be short and direct enough to be relevant to busy professionals who, if interested, can come back to the laboratory for more information.

The Center for Utilization of Federal Technology (CUFT) was created in the Stevenson-Wydler Act as an independent entity but in practice has functioned well as part of the National Technical Information Service (NTIS). The substitute amendment abolishes CUFT as a separate entity and splits its functions between NTIS and FLC. It is anticipated that the change will have no impact on current CUFT operations.

This section also permits the Secretary of Commerce to make that department's expertise in technology transfer and related fields available upon request to other federal agencies. The Secretary is also permitted to develop and disseminate model provisions for use on a voluntary basis in cooperative research and development arrangements.

II. DISTRIBUTION OF ROYALTIES RECEIVED BY FEDERAL AGENCIES

Agencies would now be permitted to retain royalties within fixed limits for use by their laboratories to reward inventors for the inventions producing the royalties, as well as for expenses incidental to the administration and licensing of inventions; for furthering scientific exchange; and if funds remain, for research and development or educational purposes which are deemed appropriate by the laboratory's director. These funds are to be used at the laboratory level for the expressed purposes listed in the section.

It is intended that most of the funds be returned to the laboratory which generated them, but the agency head does have the discretionary authority under this section to allocate a small portion of the royalty income to reward scientific, engineering, and technical employees of laboratories, with little potential for royalty income. Federal agencies must report to Congress regarding their royalty receipts and their uses of royalty income as part of their annual budget submissions.

Subsection (b) of this section provides for distribution of royalties received by the agency from innovations of contractors, grantees, parties to cooperative agreement, and non-laboratory federal employees. This subsection is not intended to change agency patenting or licensing procedures.

III. MISCELLANEOUS AND CONFORMING AMENDMENTS

This section makes a number of technical amendments to the Stevenson-Wydler Act to conform that Act to actual practice under it. It also repeals the section authorizing establishment of a Nation-

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al Industrial Technology Board and Changes the names of the Centers for Industrial Technology to Cooperative Research Centers.

SECTION-BY-SECTION ANALYSIS

Section 1. The short title is the Federal Technology Transfer Act of 1985.

Section 2. Federal agencies may permit directors of their government-operated laboratories to enter into cooperative R&D agreements with universities, industry, and other entities. The agencies may go ahead with agreements that are already in process but within 180 days must come up with regulations or instructions that limit headquarters review of an agreement to 30 days and that give special consideration both to small business and to firms manufacturing in the U.S. They also are to establish employee standards of conduct for resolving potential conflicts of interest.

Section 3. The Federal Laboratory Consortium for Technology Transfer is formally established as an organization made up of technology transfer officials from throughout the government and is located within NSF. The responsibilities given to FLC reflect what the organization is now doing or attempting to do as a voluntary organization. FLC officially would be the coordinator among laboratories regarding technology transfer matters and specifically would be authorized to establish an electronic mail system. FLC would be funded by a set aside of an amount equal to 0.005% of the research and development budgets of the federal laboratories for the next five years only; the annual total would be about $900,000. Lab directors or agencies could supplement the amount and would be expected to take over the funding on a voluntary basis at the end of the five year period.

Section 4. This section makes technology transfer part of every laboratory research employee's responsibility and requires lab directors to make sure that, as appropriate, technology transfer efforts are considered in personnel actions and promotions. Each laboratory with 200 or more full-time scientific and engineering professionals is required to have a full-time equivalent technology transfer position. The Center for Utilization of Federal Technology, which functionally is now part of the Natinoal Technical Information Service, is abolished and its functions are transferred intact to the NTIS. Each agency is required to report annually on technology transfer efforts as part of its annual budget submission to Congress. The Secretary of Commerce is authorized to make available to interested agencies that department's expertise regarding commercialization at inventions and to develop and disseminate model provisions for use on a voluntary basis in cooperative R&D agreements.

Section 5. This section requires Federal agencies which do substantial amounts of research and development to set up a cash awards program for rewarding scientific and technical personnel for inventions, innovations, or other outstanding scientific and technological contributions of value to the U.S.

Section 6. This section allows agencies to retain royalty income for their laboratories to use to pay for expenses incidental to licensing inventions, to reward scientific and technical employees, to fur-

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ther scientific exchange, and if any money remains, to fund scientific research and development. It also requires each agency to report on such royalty related activities as part of its annual budget submission.

Section 7. These are miscellaneous and conforming amendments to bring the Stevenson-Wydler Act into conformity with actual practice. The National Industrial Technology Board, which was never activated, is abolished, and the Assistant Secretary position in the Department of Commerce for Productivity, Technology, and Innovation is given a statutory basis. The Centers for Industrial Technology are renamed Cooperative Research Centers.

Effect of Legislation on Inflation

In accordance with Rule XI, Clause 2(l)(4), of the Rules of the House of Representatives, this legislation is assessed to have no adverse inflationary effect on prices and costs in the operation of the national economy.

Committee Oversight Findings and Recommendations

Pursuant to Rule XI, Clause 2(l)(3)(A), and under the authority of Rule X, Clause 2(b)(1) and Clause 3(f), of the Rules of the House of Representatives, the following statement on oversight activities is made:

The Committee's oversight findings and recommendations are contained in the body of this report.

Oversight Findings and Recommendations by the Committee on Government Operations

No statement of findings and recommendations on oversight activity have been submitted by the Committee on Government Operations for inclusion in this report, pursuant to Rule X, Clause 2(b)(2), and Rule XI, Clause 2(l)(3) of the Rules of the House of Representatives.

Budget Analysis and Projection

H.R. 3773 provides no new budget authority or tax expenditures. Consequently, the provisions of section 308(a) of the Congressional Budget Act are not applicable.

Congressional Budget Office Cost Estimate

U.S. Congress,
Congressional Budget Office,
Washington, DC, November 25, 1985.

Hon. Don Fuqua,
Chairman, Committee on Science and Technology,
U.S. House of Representatives, Washington, DC.

Dear Mr. Chairman: The Congressional Budget Office has reviewed H.R. 3773, the Federal Technology Transfer Act of 1985, as amended and ordered reported by the House Committee on Science and Technology, November 21, 1985.

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We estimate that enactment of this bill would result in no significant cost to the federal government, and in no cost to state and local governments. The bill would amend the Stevenson-Wydler Technology Innovation Act of 1980 and would establish a number of procedures to encourage the development of technologies by laboratories owned or operated by the federal government, facilitate the transfer of such technologies to the public, and promote cooperation between those laboratories and the private sector. Based on information from the agencies involved, we expect that the implementation of the procedures and provisions of this act would not require the use of a significant amount of additional resources.

If you wish further details on this estimate, we will be pleased to provide them.

With best wishes,

Sincerely,

RUDY PENNER, *Director.*

COMMITTEE RECOMMENDATION

A quorum being present, the bill was ordered favorably reported on November 21, 1985 by a voice vote.

CHANGES IN EXISTING LAW MADE BY THE BILL, AS REPORTED

In compliance with clause 3 of Rule XIII of the Rules of the House of Representatives, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted in enclosed in black brackets, new matter is printed in italic, existing law in which no change is proposed is shown in roman):

STEVENSON-WYDLER TECHNOLOGY INNOVATION ACT OF 1980

* * * * * * *

SEC. 3. PURPOSE

It is the purpose of this Act to improve the economic, environmental, and social well-being of the United States by—

(1) establishing organizations in the executive branch to study and stimulate technology;

(2) promoting technology development through the establishment of [centers for industrial technology;] *cooperative research centers,*

* * * * * * *

SEC. 4. DEFINITIONS.

As used in this Act, unless the context otherwise requires, the term—

(1) "Office" means the Office of [Industrial Technology] *Productivity, Technology, and Innovation* established under section 5 of this Act.

* * * * * * *

(3) ["Director" means the Director of the Office of Industrial Technology] *"Assistant Secretary" means the Assistant Secretary for Productivity, Technology, and Innovation,* appointed pursuant to seciton 5 of this Act.

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(4) "Centers" means the [Centers for Industrial Technology] *Cooperative Research Centers* established under section 6 or section 8 of this Act.

* * * * * * *

[(6) "Board" means the National Industrial Technology Board established pursuant to section 10.]

[(7)] *(6)* "Federal laboratory" means any laboratory, any federally funded research and development center, or any center established under section 6 or section 8 of this Act that is owned, *leased, or otherwise used by a Federal agency* and funded by the Federal Government, whether operated by the Government or by a contractor.

[(8)] *(7)* "Supporting agency" means either the Department of Commerce or the National Science Foundation, as appropriate.

(8) "Federal agency" means any executive agency as defined in section 105 of title 5, United States Code, and the military departments as defined in section 102 of such title.

(9) "Invention" means any invention or discovery which is or may be patentable or otherwise protected under title 35, United States Code, or any novel variety of plant which is or may be protectable under the Plant Variety Protection Act (7 U.S.C. 2321 et seq.).

(10) "Made" when used in conjunction with any invention means the conception or first actual reduction to practice of such invention.

(11) "Small business firm" means a small business concern as defined in section 2 of Public Law 85-536 (15 U.S.C. 632) and implementing regulations of the Administrator of the Small Business Administration.

SEC. 5. COMMERCE AND TECHNOLOGICAL INNOVATION

(a) IN GENERAL.—The Secretary shall establish and maintain an Office of [Industrial Technology] *Productivity, Technology, and Innovation* in accordance with the provisions, findings, and purposes of this Act.

(b) [DIRECTOR.] ASSISTANT SECRETARY.—The President shall appoint, by and with the advice and consent of the Senate, [a Director of the Office, who shall be compensated at the rate provided for level V of the Executive Schedule in section 5316 of title 5, United States Code.] *an Assistant Secretary for Productivity, Technology, and Innovation.*

(c) DUTIES.—The Secretary, through the [Director] *Assistant Secretary*, on a continuing basis, shall—

(1) determine the relationships of technological developments and international technology transfers to the output, employment, productivity, and world trade performance of United States and foreign industrial sectors;

(2) determine the influence of economic, labor and other conditions, industrial structure and management, and government policies on technological developments in particular industrial sectors worldwide;

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(3) identify technological needs, problems, and opportunities within and across industrial sectors that, if addressed, could make a significant contribution to the economy of the United States;

(4) assess whether the capital, technical and other resources being allocated to domestic industrial sectors which are likely to generate new technologies are adequate to meet private and social demands for goods and services and to promote productivity and economic growth;

(5) propose and support studies and policy experiments, in cooperation with other Federal agencies, to determine the effectiveness of measures with the potential of advancing United States technological innovation;

(6) provide that cooperative efforts to stimulate industrial innovation be undertaken between the [Director] *Assistant Secretary* and other officials in the Department of Commerce responsible for such areas as trade and economic assistance;

(7) consider government measures with the potential of advancing United States technological innovation and exploiting innovations of foreign origin; and

(8) publish the results of studies and policy experiments.

(d) REPORT.—The Secretary shall prepare and submit to the President and Congress, within 3 years after the date of enactment of this Act, a report on the progress, findings, and conclusions of activites conducted pursuant to sections 5, 6, 8, 11, 12, and 13 of this Act *(as then in effect)* and recommendations for possible modifications thereof.

[SEC. 6. CENTERS FOR INDUSTRIAL TECHNOLOGY.] *SEC. 6. COOPERATIVE RESEARCH CENTERS.*

(a) ESTABLISHMENT.—The Secretary shall provide assistance for the establishment of [Centers for Industrial Technology.] *Cooperative Research Centers.* Such Centers shall be affiliated with any university, or other nonprofit institution, or group thereof, that applies for and is awarded a grant or enters into a cooperative agreement under this section. The objective of the Centers is to enhance technological innovation through—

(1) the participation of individuals from industry and universities in cooperative technological innovation activities;

* * * * * * *

(b) ACTIVITIES.—The activities of the Centers shall include, but need not be limited to—

(1) research supportive of technological and industrial innovation including cooperative industry-university [basic and applied] research;

* * * * * * *

[(e) RESEARCH AND DEVELOPMENT UTILIZATION.—(1) To promote technological innovation and commercialization of research and development efforts, each Center has the option of acquiring title to any invention conceived or made under the auspices of the Center that was supported at least in part by Federal funds: *Provided,* That—

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[(A) the Center reports the invention to the supporting agency together with a list of each country in which the Center elects to file a patent application on the invention;

[(B) said option shall be exercised at the time of disclosure of invention or within such time thereafter as may be provided in the grant or cooperative agreement;

[(C) the Center intends to promote the commercialization of the invention and file a United States patent application;

[(D) royalties be used for compensation of the inventor or for educational or research activities of the Center;

[(E) the Center make periodic reports to the supporting agency, and the supporting agency may treat information contained in such reports as privileged and confidential technical, commercial, and financial information and not subject to disclosures under the Freedom of Information Act; and

[(F) any Federal department or agency shall have the royalty-free right to practice, or have practiced on its behalf, the invention for governmental purposes.

The supporting agency shall have the right to acquire title to any patent on an invention in any country in which the Center elects not to file a patent application or fails to file within a reasonable time.

[(2) Where a Center has retained title to an invention under paragraph (1) of this subsection the supporting agency shall have the right to require the Center or its licensee to grant a nonexclusive, partially exclusive, or exclusive license to a responsible applicant or applicants, upon terms that are reasonable under the circumstances, if the supporting agency determines, after public notice and opportunity for hearing, that such action is necessary—

[(A) because the Center or licensee has not taken and is not expected to take timely and effective action to achieve practical application of the invention;

[(B) to meet health, safety, environmental, or national security needs which are not reasonably satisfied by the contractor or licensee; or

[(C) because the granting of exclusive rights in the invention has tended substantially to lessen competition or to result in undue market concentration in the United States in any line of commerce to which the technology relates.

[(3) Any individual, partnership, corporation, association, institution, or other entity adversely affected by a supporting agency determination made under paragraph (2) of this subsection may, at any time within 60 days after the determination is issued, file a petition to the United States Court of Claims which shall have jurisdiction to determine that matter de novo and to affirm, reverse, or modify as appropriate, the determination of the supporting agency.]

(e) RESEARCH AND DEVELOPMENT UTILIZATION.—In the promotion of technology from research and development efforts by Centers under this section, chapter 18 of title 35, United States Code, shall apply to the extent not inconsistent with this section.

[(f) ADDITIONAL CONSIDERATION.—The supporting agency may request the Attorney General's opinion whether the proposed joint research activities of a Center would violate any of the antitrust

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laws. The Attorney General shall advise the supporting agency of his determination and the reasons for it within 120 days after receipt of such request.]

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SEC. 8. NATIONAL SCIENCE FOUNDATION [CENTERS FOR INDUSTRIAL TECHNOLOGY.] *COOPERATIVE RESEARCH CENTERS.*

(a) ESTABLISHMENT AND PROVISIONS.—The National Science Foundation shall provide assistance for the establishment of [Centers for Industrial Technology] *Cooperative Research Centers.* Such Centers shall be affiliated with a university, or other nonprofit institution, or a group thereof. The objective of the Centers is to enhance technological innovation as provided in section 6(a) through the conduct of activities as provided in section 6(b). [The provisions of sections 6(e) and 6(f) shall apply to Centers established under this section.]

* * * * * * *

SEC. 9. ADMINISTRATIVE ARRANGEMENTS.

(a) * * *

* * * * * * *

(d) COOPERATIVE EFFORTS.—The Secretary and the National Science Foundation shall, on a continuing basis, provide each other the opportunity to comment on any proposed program of activity under section 6, 8, or [13] *12* of this Act before funds are committed to such program in order to mount complementary efforts and avoid duplication.

SEC. 10. NATIONAL INDUSTRIAL TECHNOLOGY BOARD.

[(a) ESTABLISHMENT.—There shall be established a committee to be known as the National Industrial Technology Board.

[(b) DUTIES.—The Board shall take such steps as may be necessary to review annually the activities of the Office and advise the Secretary and the Director with respect to—

[(1) the formulation and conduct of activities under section 5 of this title;

[(2) the designation and operation of Centers and their programs under section 6 of this Act including assistance in establishing priorities;

[(3) the preparation of the report required under section 5(d); and

[(4) such other matters as the Secretary or Director refers to the Board, including the establishment of Centers under section 8 of this Act, for review and advice.

The Director shall make available to the Board such information, personnel, and administrative services and assistance as it may reasonably require to carry out its duties. The National Science Foundation shall make available to the Board such information and assistance as it may reasonably require to carry out its duties.

[(c) MEMBERSHIP, TERMS, AND POWERS.—

[(1) The Board shall consist of 15 voting members who shall be appointed by the Secretary. The Director shall serve as a nonvoting member of the Board. The members of the Board shall be individuals who, by reason of knowledge, experience,

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or training are especially qualified in one or more of the disciplines and fields dealing with technology, labor, and industrial innovation or who are affected by technological innovation. The majority of the members of the Board shall be individuals from industry and business.

[(2) The term of office of a voting member of the Board shall be 3 years, except that of the original appointees, five shall be appointed for a term of 1 year, five shall be appointed for a term of 2 years, and five shall be appointed for a term of 3 years.

[(3) Any individual appointed to fill a vacancy occurring before the expiration of the term for which his or her predecessor was appointed shall be appointed only for the remainder of such term. No individual may be appointed as a voting member after serving more than two full terms as such a member.

[(4) The Board shall select a voting member to serve as the Chairperson and another voting member to serve as the Vice Chairperson. The Fice Chairperson shall perform the functions of the Chairperson in the absence or incapacity of the Chairperson.

[(5) Voting members of the Board may receive compensation at a daily rate for GS–18 of the General Schedule under section 5332 of title 5, United States Code, when actually engaged in the performance of duties for such Board, and may be reimbursed for actual and reasonable expenses incurred in the performance of such duties.]

SEC. [11.] *10.* UTILIZATION OF FEDERAL TECHNOLOGY.

(a) POLICY.—*(1)* It is the continuing responsibility of the Federal Government to ensure the full use of the results of the Nation's Federal investment in research and development. To this end the Federal Government shall strive where appropriate to transfer federally owned or originated technology to State and local governments and to the private sector.

(2) Technology transfer, consistent with mission responsibilities, is a responsibility of each laboratory science and engineering professional.

(3) Each laboratory director shall ensure that efforts to transfer technology are considered positively in laboratory job descriptions, employee promotion policies, and evaluation of the job performance of scientists and engineers in the laboratory.

(b) ESTABLISHMENT OF RESEARCH AND TECHNOLOGY APPLICATIONS OFFICES.—Each Federal laboratory shall establish an Office of Research and Technology Applications. Laboratories having existing organizational structures which perform the functions of this section may elect to combine the Office of Research and Technology Applications within the existing organization. The staffing and funding levels for these offices shall be determined between each Federal laboratory and the Federal agency operating or directing the laboratory, except that (1) each laboratory having [a total annual budget exceeding $20,000,000 shall provide at least one professional individual full-time] *200 or more full-time scientific, engineering, and related technical positions shall provide one or more*

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full-time equivalent positions as staff for its Office of Research and Technology Applications, and (2) after September 30, 1981, each Federal agency which operates or directs one or more Federal laboratories shall make available not less than 0.5 percent of the agency's research and development budget to support the technology transfer function at the agency and at its laboratories, including support of the Offices of Research and Technology Applications. *Furthermore, individuals filling positions in an Office of Research and Technology Applications shall be included in the overall laboratory/agency management development program so as to ensure that highly competent technical managers are full participants in the technology transfer process;* The agency head may waive the [requirements set forth in (1) and/or (2) of this subsection] *requirement set forth in clause (2) of the preceding sentence.* If the agency head waives [either requirement (1) or (2),] *such requirement,* the agency head shall submit to Congress at the time the President submits the budget to Congress an explanation of the reasons for the waiver and alternate plans for conducting the technology transfer function at the agency.

(c) FUNCTIONS OF RESEARCH AND TECHNOLOGY APPLICATIONS OFFICES.—It shall be the function of each Office of Research and Technology Applications—

[(1) to prepare an application assessment of each research and development project in which that laboratory is engaged which has potential for successful application in State or local government or in private industry;]

(1) to prepare application assessments for selected research and development projects in which that laboratory is engaged and which in the opinion of the laboratory may have potential commerical applications;

(2) to provide and disseminate information on *all* federally owned or originated products, processes, and services having potential application to State and local governments and to private industry;

(3) to cooperate with and assist the [Center for the Utilization of Federal Technology] *the National Technical Information Service, the Federal Laboratory Consortium for Technology Transfer,* and other organizations which link the research and development resources of that laboratory and the Federal Government as a whole to potential users in State and local government and private industry; and

(4) to provide technical assistance [in response to requests from] *to* State and local government officials.

Agencies which have established organizational structures outside their Federal laboratories which have as their principal purpose the transfer of federally owned or originated technology to State and local government and to the private sector may elect to perform the functions of this subsection in such organizational structures. No Office of Research and Technology Applications or other organizational structures performing the functions of this subsection all substantially compete with similar services available in the private sector.

[(d) CENTER FOR THE UTILIZATION OF FEDERAL TECHNOLOGY.—There is hereby established in the Department of Commerce a

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Center for the Utilization of Federal Technology. The Center for the Utilization of Federal Technology shall—]

(d) DISSEMINATION OF TECHNICAL INFORMATION.—The National Technical Information Service shall—

(1) serve as a central clearinghouse for the collection, dissemination and transfer of information on federally owned or originated technologies having potential application to State and local governments and to private industry;

[(2) coordinate the activities of the Offices of Research and Technology Applications of the Federal laboratories;]

[(3)] *(2)* utilize the expertise and services of the National Science Foundation and the [existing] Federal Laboratory Consortium for Technology Transfer; particularly in dealing with State and local governments;

[(4) receive requests for technical assistance from State and local governments and refer these requests to the appropriate Federal laboratories;]

(3) receive requests for technical assistance from State and local governments, respond to such requests with published information available to the Service, and refer such requests to the Federal Laboratory Consortium for Technology Transfer to the extent that such requests need a response involving more than the published information available to the Service;

[(5)]*(4)* provide funding, at the discretion of the Secretary, for Federal laboratories to provide the assistance specified in subsection [(c)(4);] *(c)(3);* and

[(6)]*(5)* use appropriate technology transfer mechanisms such as personnel exchanges and computer-based systems.

(e) ESTABLISHMENT OF FEDERAL LABORATORY CONSORTIUM FOR TECHNOLOGY TRANSFER.—(1) There is hereby established the Federal Laboratory Consortium for Technology Transfer (hereinafter referred to as the "Consortium") which shall be within the National Science Foundation and which, in cooperation with Federal laboratories and the private sector, shall—

(A) develop and administer techniques, training courses, and materials concerning technology transfer to increase the awareness of Federal laboratory employees regarding the commercial potential of laboratory technology and innovations, except that such techniques, courses, and materials may be administered only with the consent of the Federal laboratory concerned;

(B) furnish advice and assistance requested by Federal agencies and laboratories for use in their technology transfer programs (including the planning of seminars for small business and other industry);

(C) provide a clearinghouse for requests for technical assistance from States and units of local governments, businesses, industrial development organizations, not-for-profit organizations including universities, Federal agencies and laboratories, and other persons, and—

(i) to the extent that such requests can be responded to with published information available to the National Technical Information Service, refer such requests to that Service; and

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(iii) otherwise refer these requests to the appropriate Federal laboratories and agencies;

(D) facilitate communication and coordination between Offices of Research and Technology Applications of Federal laboratories;

(E) utilize (with the consent of the agency involved) the expertise and services of the National Science Foundation, the Department of Commerce, the National Aeronautics and Space Administration, and other Federal agencies, as necessary;

(F) with the consent of any Federal laboratory, facilitate the use by such laboratory of appropriate technology transfer mechanisms such as personnel exchanges and computer-based systems.

(G) with the consent of any Federal laboratory, assist such laboratory to establish technical volunteer service programs for the purpose of providing technical assistance to communites related to such laboratory;

(H) facilitate communication and cooperation between Offices of Research and Technology Applications of Federal laboratories and regional, State, and local technology transfer organizations; and

(I) establish advisory committees in each Federal laboratory consortium region composed of representatives from State and local governments, large and small business, universities, and other appropriate persons to advise on the effectiveness of the program (and the members of any such advisory committee shall serve at no expense to the government).

(2) The membership of the Consortium shall consist of the Federal laboratories described in clause (1) of subsection (b) and such other laboratories as may choose to join the Consortium. The representatives to the Consortium shall include a senior staff member of each Federal laboratory which is a member of the Consortium and a representative appointed from each Federal agency with one or more member laboratories.

(3) The representatives to the Consortium shall elect a Chairman of the Consortium.

(4) The Director of the National Science Foundation shall provide the Consortium on a reimbursable basis with administrative services, such as office space, personnel, and support services of the Foundation, as requested by the Consortium and approved by such Director.

(5) Not later than one year after the date of the enactment of this subsection, and every year thereafter, the Chairman of the Consortium shall submit a report to the President, to the appropriate authorization and appropriation committees of both Houses of the Congress, and to each agency with respect to which a transfer of funding is made (for the fiscal year or years involved) under paragraph (6), concerning the activities of the Consortium and the expenditures made by it under this subsection during the year for which the report is made.

(6)(A) Subject to subparagraph (B), and amount equal to 0.005 percent of that portion of the research and development budget of each Federal agency that is to be utilized by the laboratories of such agency for a fiscal year referred to in subparagraph (B)(ii) shall be

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transferred by such agency to the National Science Foundation at the beginning of the fiscal year involved. Amounts so transferred shall be provided by the Foundation to the Consortium for the purpose of carrying out activities of the Consortium under this subsection.

(B) A transfer may be made by any Federal agency under subparagraph (A), for any fiscal year, only if—

(i) the amount so transferred by that agency (as determined under such subparagraph) would exceed $10,000; and

(ii) such transfer is made with respect to the fiscal year 1987, 1988, 1989, 1990, or 1991.

(C) The heads of Federal agencies and their designees, and the directors of Federal laboratories, are authorized to provide such additional support for operations of the Consortium as they deem appropriate.

[(e)] *(f)* AGENCY REPORTING.—Each Federal agency which operates or directs one or more Federal laboratories shall [prepare biennially a report summarizing] *report annually to the Congress, as part of the agency's annual budget submission, on* the activities performed by that agency and its Federal laboratories pursuant to the provisions of this section. [The report shall be transmitted to the Center for the Utilization of Federal Technology by November 1 of each year in which it is due.]

(g) FUNCTIONS OF THE SECRETARY.—The Secretary, in consultation with other Federal agencies, may—

(1) make available to interested agencies the expertise of the Department of Commerce regarding the commercial potential of inventions and methods and options for commercialization which are available to the Federal laboratories, including research and development limited partnerships;

(2) develop and disseminate to appropriate agency and laboratory personnel model provisions for use on a voluntary basis in cooperative research and development arrangements; and

(3) furnish advice and assistance, upon request, to Federal agencies concerning their cooperative research and development program and projects.

SEC. 11. COOPERATIVE RESEARCH AND DEVELOPMENT AGREEMENTS.

(a) GENERAL AUTHORITY.—Each Federal agency may permit the director of any of its Government-operated Federal laboratories—

(1) to enter into cooperative research and development agreements on behalf of such agency (subject to subsection (c) of this section) with other Federal agencies; units of State or local government; industrial organizations including corporations, partnerships, and limited partnerships; industrial development organizations; public and private foundations; nonprofit organizations including universities; licensees of Federal inventions; or other persons; and

(2) to negotiate licensing agreements under section 207 of title 35, United States Code, or under other authorities.

(b) ENUMERATED AUTHORITY.—Under agreements described in subsection (a)(1), a Government-operated Federal laboratory shall have the authority (subject to subsection (c) of this section)—

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(1) to grant or agree to grant in advance, to a collaborating party, patent licenses or assignments, or options thereto, in any invention made by a Federal employee, or made jointly by a Federal employee and an employee of the collaborating party, under the agreement, retaining such rights as the Federal laboratory deems appropriate; and

(2) to waive in advance, in whole or in part, any right of ownership which the Federal Government may have to any subject invention made by a collaborating party or employee of a collaborating party under the agreement.

(c) AGENCY PLAN.—(1)(A) Within 180 days after the election by any Federal agency to implement subsection (a), revised regulations or instructions for that agency's cooperative research and development program shall be drafted or modified. The revised regulations or instructions need not apply to cooperative agreements entered into prior to the effective date of such regulations or instructions. Such revised regulations or instructions shall—

(i) if they give the head of the agency or his designee an opportunity to disapprove or require the modification of any such agreement, provide a 30-day period beginning on the date the agreement is presented to him or her by the head of the laboratory concerned within which such action must be taken;

(ii) give special consideration to small business firms, and consortia involving small business firms;

(iii) give preference to business units located in the United States which agree that products embodying inventions made under the cooperative research and development agreement or produced through the use of such invention will be manufactured substantially in the United States;

(iv) establish employee standards of conduct for resolving potential conflicts of interest, including but not limited to cases where present or former employees or their partners negotiate licenses or assignments of titles to inventions or negotiate cooperative research and development agreements with Federal agencies (including the agency with which the employee involved is or was formerly employed); and

(v) contain other elements deemed appropriate by the agency.

(B) In any case in which the head of an agency or his designee disapproves or requires the modification of an agreement presented under this section, the head of the agency or such designee shall transmit a written explanation of such disapproval or modification to the head of the laboratory concerned.

(C) If, in implementing subparagraph (A)(iv), an agency is unable to resolve potential conflicts of interest within its current statutory framework, it shall propose necessary statutory changes to be forwarded to its authorizing committees in Congress.

(2) Each agency shall maintain a record of all agreements entered into under this section.

(d) DEFINITION.—As used in this section, the term "cooperative research and development agreement" means any agreement between one or more Federal laboratories and one or more non-Federal parties under which the laboratory or laboratories will provide personnel, services, facilities, equipment, or other resources (but not funds to non-Federal parties) and the non-Federal party or parties will

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provide funds, personnel, services, facilities, equipment, or other resources toward the conduct of specified research or development efforts which are consistent with the missions of the agency; except that such term does not include a procurement contract as that term is used in section 6303 of title 31, United States Code, or a cooperative agreement as that term is used in section 6305 of such title.

(e) RELATIONSHIP TO OTHER LAWS.—Nothing in this section is intended to limit or diminish existing authorities of any agency.

SEC. 12. REWARDS FOR SCIENTIFIC, ENGINEERING, AND TECHNICAL PERSONNEL OF FEDERAL AGENCIES.

The head of each Federal agency that is making expenditures at a rate of more than $50,000,000 per fiscal year for research and development in its Government-operated laboratories shall use the appropriate statutory authority to develop and implement a cash awards program to reward its scientific, engineering, and technical personnel for—

(1) inventions, innovations, or other outstanding scientific or technological contributions of value to the United States due to commercial applications or due to contributions to missions of the Federal agency or the Federal government, or

(2) exemplary activities that promote the domestic transfer of science and technology developed within the Federal Government and result in utilization of such science and technology by American industry or business, universities, State or local governments, or other non-Federal parties.

SEC. 13. DISTRIBUTION OF ROYALTIES RECEIVED BY FEDERAL AGENCIES.

(a) IN GENERAL.—(1) Except as provided in paragraph (2), any royalties or other income received by a Federal agency from the licensing or assignment of inventions under agreements entered into under section11, and from inventions of Government-operated Federal laboratories licensed under section 207 of title 35, United States Code, or under any other provision of law shall be retained by the agency involved in the production of the income. Such funds shall be transferred by the agency to its Government-operated laboratories, with the major share of the royalties or other income from any invention going to the laboratory where the invention occurred; and the funds so transferred to any such laboratory may be used or obligated by that laboratory during the fiscal year in which they are received or during the succeeding fiscal year—

(A) for payment of expenses incidental to the administration and licensing of inventions by that laboratory or by the agency with respect to inventions which occurred at that laboratory, including the fees or other costs for the services of other agencies, persons, or organizations for invention management and licensing services;

(B) to reward scientific, engineering, and technical employees of that laboratory as part of the agency's reward program established pursuant to the preceding section of this Act; provided that any payment made under this paragraph shall be in addition to the regular pay of the employee involved and to any other awards made to that employee, and shall not affect the entitlement of the employee to any regular pay, annuity, or

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award to which he is otherwise entitled or for which he is otherwise eligible or limit the amount thereof;

(C) to further scientific exchange among the government-operated laboratories of the agency; or

(D) for scientific research and development, for education and training of employees of that consistent with the research and development mission and objectives of the agency, and for other activities that increase the licensing potential for transfer of the technology of the Government-operated laboratories of the agency.

Any of such funds not so used or obligated by the end of the fiscal year succeeding the fiscal year in which they are received shall be paid into the Treasury of the United States.

(2) If the royalties received by an agency in any fiscal year exceed 5 percent of the budget of the Government-operated laboratories of the agency for that year, 75 percent of such excess shall be paid to the Treasury of the United States and the remaining 25 percent may be used or obligated for the purposes described in subparagraphs (A) through (C) of paragraph (1) during that fiscal year or the succeeding fiscal year. Any funds not so used or obligated shall be paid into the Treasury of the United States.

(b) CERTAIN ASSIGNMENTS.—In the event that the invention involved was one assigned to the Federal agency—

(1) by a contractor, grantee, or party to a cooperative agreement with the agency, or

(2) by an employee of the agency who was not working in a Government-operated laboratory at the time the invention was made,

the agency unit that funded or employed the entity that made such assignment shall be considered to be a Government-operated laboratory for purposes of this section.

(c) REPORTS.—In making their annual budget submissions Federal agencies shall submit, to the appropriate authorization and appropriation committees of both Houses of the Congress, summaries of the amount of royalties or other income received and expenditures made (including inventor awards) under this section.

SEC. [12.] ***14.*** **NATIONAL TECHNOLOGY MEDAL.**

(a) ESTABLISHMENT.—There is hereby established a National Technology Medal, which shall be of such design and materials and bear such inscriptions as the President, on the basis of recommendations submitted by the Office of Science and Technology Policy, may prescribe.

(b) AWARD.—The President shall periodically award the medal, on the basis of recommendations received from the Secretary or on the basis of such other information and evidence as he deems appropriate, to individuals or companies, which in his judgment are deserving of special recognition by reason of their outstanding contributions to the promotion of technology or technological manpower for the improvement of the economic environmental, or social well-being of the United States.

(c) PRESENTATION.—The presentation of the award shall be made by the President with such ceremonies as he may deem proper.

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SEC. [13.] *15.* PERSONNEL EXCHANGES.

The Secretary and the National Science Foundation, jointly, shall establish a program to foster the exchange of scientific and technical personnel among academia, industry, and Federal laboratories. Such program shall include both (1) federally supported exchanges and (2) efforts to stimulate exchanges without Federal funding.

SEC. [14.] *16.* AUTHORIZATION OF APPROPRIATIONS.

(a) There is authorized to be appropriated to the Secretary for purposes of carrying out section 6, not to exceed $19,000,000 for the fiscal year ending September 30, 1981, $40,000,000 for the fiscal year ending September 30, 1982, $50,000,000 for the fiscal year ending September 30, 1983, and $60,000,000 for each of the fiscal years ending September 30, 1984, and 1985.

(b) In addition to authorizations of appropriations under subsection (a), there is authorized to be appropriated to the Secretary for purposes of carrying out the provisions of this Act, not to exceed $5,000,000 for the fiscal year ending September 30, 1981, $9,000,000 for the fiscal year ending September 30, 1982, and $14,000,000 for each of the fiscal years ending September 30, 1983, 1984, and 1985.

(c) Such sums as may be appropriated under subsections (a) and (b) shall remain available until expended.

(d) To enable the National Science Foundation to carry out its powers and duties under this Act only such sums may be appropriated as the Congress may authorize by law.

SEC. [15.] *17.* SPENDING AUTHORITY.

No payments shall be made or contracts shall be entered into pursuant to this Act except to such extent or in such amounts as are provided in advance in appropriation Acts.

SECTION 210 OF TITLE 35, UNITED STATES CODE

§ 210. Precedence of chapter

(a) This chapter shall take precedence over any other Act which would require a disposition of rights in subject inventions of small business firms or nonprofit organizations contractors in a manner that is inconsistent with this chapter, including but not necessarily limited to the following:

(1) section 10(a) of the Act of June 29, 1935, as added by title I of the Act of August 14, 1946 (7 U.S.C. 427i(a); 60 Stat. 1085);

* * * * * * *

(e) The provisions of the Stevenson-Wydler Technology Innovation Act of 1980, as amended by the Federal Technology Transfer Act of 1985, shall take precedence over the provisions of this chapter to the extent that they permit or require a disposition of rights in subject inventions which is inconsistent with such chapter.

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